

Advanced Microscopy Facility



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FUNCTION: Provides a facility for high-resolution studies of complex biomolecular systems. The goal is an understanding of how to engineer biomolecules for various applications, including sensors, self-assembled lipid microstructures, patterned surfaces, and biomaterials.

DESCRIPTION: The facility includes electron microscopes, a darkroom, and adjacent biochemical laboratories for sample preparation and additional chemical/physical characterization of proteins, lipids, DNA, and cells.

INSTRUMENTATION:

- Digital scanning electron microscope - Leo 1455
- Hitachi H8100 AEM
- Zeiss transmission electron microscope (TEM) - EM10
- Scanning probe microscope - Topometric Explorer AFM
- Digital Instruments AFM - Dimension 3100
- Scanning probe microscope capable of Multimode Atomic Force
- Microscopy and scanning tunneling microscopy (STM)
- Scanning-tip AFM capable of imaging large samples using contact mode, noncontact mode, lateral force mode, and force modulation mode
- TopoMetrix Aurora Near-field Scanning Optical Microscope (NSOM)
- Optical equipment
- Confocal fluorescent microscope
- CW fluorimeter and microscope
- Optical and fluorescence microscopes
- Freeze fracture apparatus - BALZERS BAF-400
- High-speed ultracentrifuges.

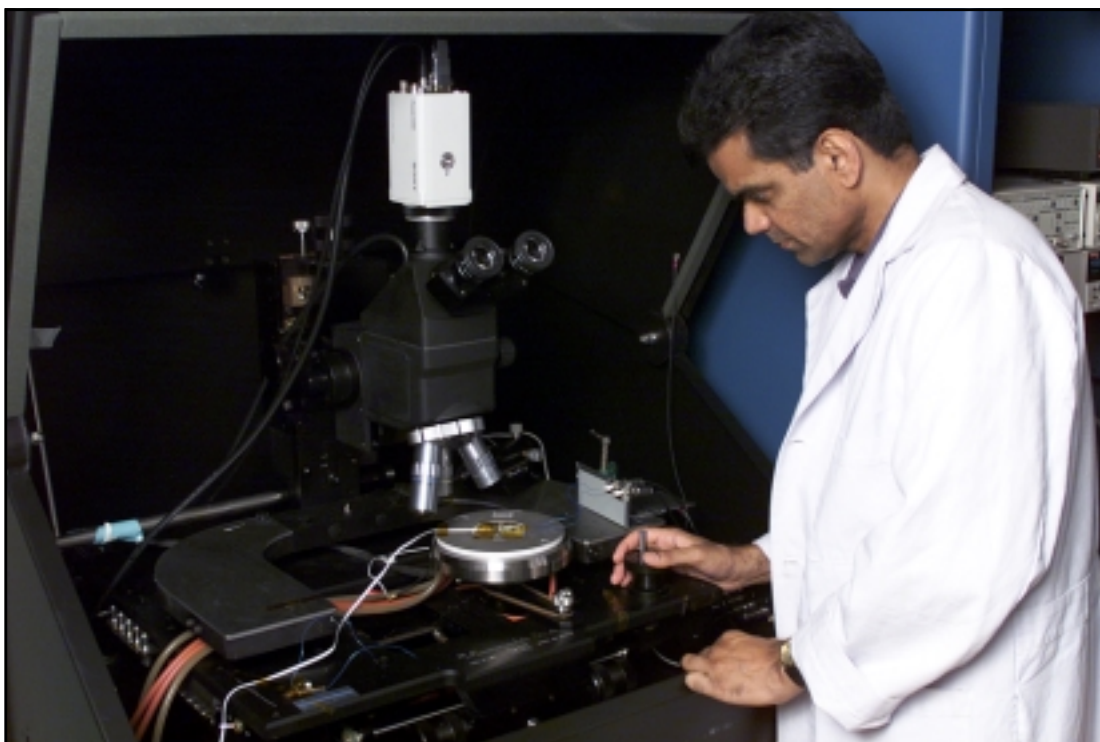
CONTACT:

R. Price • Code 6930 • (202) 404-6018

LOCATION:

Bldg. 30, Rm. B6 • NRL, Washington, DC

Liquid Crystal Fabrication Facility



Liquid Crystal Fabrication Facility

FUNCTION: Provides facilities to synthesize and characterize liquid crystals for basic and applied research.

DESCRIPTION: This laboratory is equipped with capabilities required for synthesis of complex liquid crystals. Initial characterization of synthesized materials is performed using standard techniques such as IR, NMR, TLC, HPLC, and UV-VIS spectroscopy. Materials are further characterized in thin liquid crystal cells (2 microns to 150 microns) or as free-standing films with a view to develop structure property relationships. Applications of these materials include pyroelectric and acoustic detectors, displays, and artificial muscle materials.

CONTACT:

R. Shashidhar • Code 6950 • (202) 404-6005

LOCATION:

Bldg. 30, Rm. 202 • NRL, Washington, DC